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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/007,583
Filing Date: December 05, 2001
Appellant(s): BERTRAM ET AL.

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For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 9, 2008 appealing from the Office action mailed July 28, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,029,195	Herz	02-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-19 are rejected under 35 U.S.C. 103(a) as obvious over Herz (US 6,029,195).

Regarding claims 1, 28, 30, 31, and 32 –

Herz discloses a computerized method for generating a recommendation of an item to an advisee, comprising the steps of:

receiving a recommendation request comprising a selected item list from an advisee for a recommendation by a recommendation system; (e.g. col 25 ln 46-62, col 3 ln 1-10); ((note that if a user is requesting a recommendation, the recommendation must somehow be received, and that no one asks for a recommendation in a vacuum, but rather asks for a recommendation on a type or list of items, such as apples, history books, or romantic movies); Also: "For example, a user searching for information on a subject can write a short description of the desired information. The information retrieval computer generates an article profile for the request and then retrieves articles with profiles similar to the profile generated for the request. These requests can then be refined using "relevance feedback", where the user actively or passively rates the articles retrieved as to how close the information contained therein is to what is desired. The information retrieval computer then uses this relevance feedback information to refine the request profile and the process is repeated until the user either finds enough articles or tires of the search." (col 2 ln 66- col 3 ln 10). Clearly, the user is making a request that is received by the information retrieval computer.) (also, "For example, a

user searching for information on a subject can write a short description of the desired information. The information retrieval computer generates an article profile for the request and then retrieves articles with profiles similar to the profile generated for the request. These requests can then be refined using "relevance feedback", where the user actively or passively rates the articles retrieved as to how close the information contained therein is to what is desired. The information retrieval computer then uses this relevance feedback information to refine the request profile and the process is repeated until the user either finds enough articles or tires of the search." (col 2 ln 66- col 3 ln 10). Obviously the user is making a request that is received by the information retrieval computer.) in response to the recommendation request, computing a plurality of similarity factors based on:

at least one advisee profile from at least one newly rated item and determining which at least one user has already rated the item, wherein the advisee profile comprises a plurality of records, each record including a user identifier, an item identifier, and a rating value, such that each record is linked in a first and a second dimension ((e.g. col 3 ln 7-10, where "computing a plurality of similarity factors" = "generates an article profile for the request"); and

items from the selected item list that indicate similarity between the advisee and a plurality of users of the recommendation system who have previously provided ratings of items from the selected item list ("relevance feedback", where the user actively or passively rates the articles retrieved as to how close the information contained therein is to what is desired. (e.g. col 3 ln 1-3, col 6 ln 38-45));

selecting, from the plurality of users of the recommendation system, neighboring users to the advisee, according to the similarity factors ("similar consumers buy similar products" (e.g. col 12 ln 25-27, col 20 ln 1-22));

generating a recommendation of at least one item of the selected item list, according to the previously provided ratings of the at least one item by the neighboring users. (e.g. col 70 ln 1-7; col 12 ln 25-27, col 20 ln 1-22);

Herz discloses wherein "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Here, it would be obvious to one of ordinary skill in the art that Herz discloses calculating similarity factors only with respect to certain users, when generating a recommendation for a movie or other item.

Regarding claim 2 –

Herz discloses the method of claim 1, wherein all items upon which the step of computing depends are included in the selected item list. (e.g. col 16 ln 34-48).

Regarding claim 3, 28 –

Herz discloses the method of claim 2, wherein the recommendation of at least one item includes only items that are included in the selected item list. (e.g. col 26 ln 22-45).

Regarding claim 4 –

Herz discloses the method of claim 1, wherein the step of selecting neighboring users excludes any user whose similarity with the advisee is below a predetermined threshold. (e.g. col 88 ln 8 - 37).

Regarding claim 5 –

Herz discloses the method of claim 1, wherein the step of computing and the step of selecting are executed substantially in parallel by inserting each newly computed similarity factor into a neighbor list in decreasing order of similarity and by limiting length of the neighbor list by excluding a user with lowest similarity if otherwise the neighbor list would exceed a predetermined length. (e.g. col 18 ln 5-8).

Regarding claim 6, 26, 27, –

Herz discloses the method of claim 1, further including the step of caching identifiers of the neighboring users, associated similarity factors, and time stamps. (e.g. col 5 ln 55-57). Although Herz does not utilize exactly the same criteria for filtering out users as in the instant case, it is inherent to merely choose different criteria or characteristics as identifiers.

Regarding claims 7, 20, and 21 –

Herz discloses a user profile for a recommendation system, comprising a plurality of records, each record including a user identifier, an item identifier, and a rating value,

wherein each record is linked in a first and a second dimension, the first dimension linking records with a same user identifier in a sequence according to the item identifier, and the second dimension linking records with a same item identifier in a sequence according to the user identifier. (e.g. col 39 ln 12-22, col 39 ln 1-11).

Note that "Relevant definitions of terms for the purpose of this description include: (a.) an object available for access by the user, which may be either physical or electronic in nature, is termed a "target object", (b.) a digitally represented profile indicating that target object's attributes is termed a "target profile", (c.) the user looking for the target object is termed a "user", (d.) a profile holding that user's attributes, including age/zip code/etc. is termed a "user profile", (e.) a summary of digital profiles of target objects that a user likes and/or dislikes, is termed the "target profile interest summary" of that user, (f.) a profile consisting of a collection of attributes, such that a user likes target objects whose profiles are similar to this collection of attributes, is termed a "search profile" or in some contexts a "query" or "query profile," (g.) a specific embodiment of the target profile interest summary which comprises a set of search profiles is termed the "search profile set" of a user, (h.) a collection of target objects with similar profiles, is termed a "cluster," (i) an aggregate profile formed by averaging the attributes of all tar get objects in a cluster, termed a "cluster profile," (j.) a real number determined by calculating the statistical variance of the profiles of all target objects in a cluster, is termed a "cluster variance," (k.) a real number determined by calculating the maximum distance between the profiles of any two target objects in a cluster, is termed a "cluster diameter."" (col 4 ln 48-col 5 ln 5). Further, as above, Herz discloses wherein

"Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Here, Herz discloses calculating similarity factors only with respect to certain users, when generating a recommendation for a movie or other item, thus it is obvious to one of ordinary skill in the art that users as target objects which are separately browsed, would be separately updated and that such users may be grouped or chosen in different ways including geographic proximity to the advisee.

Regarding claims 8, 24, and 29 –

Herz discloses a computerized method for generating a recommendation of an item to an advisee, comprising the steps of:

receiving a recommendation request comprising a selected item list from an advisee for the recommendation by a recommendation system (e.g. col 25 ln 46-62, col 3 ln 1-10); (note that if a user is requesting a recommendation, the recommendation must somehow be received, and that no one asks for a recommendation in a vacuum, but rather asks for a recommendation on a type or list of items, such as apples, history books, or romantic movies);

in response to the recommendation request, computing a plurality of similarity factors based on at least one advisee profile from at least one newly rated item and determining which at least one user has already rated the item (e.g. col 3 ln 7-10);

selecting a first set of users from a group of users of the recommendation system based on the selected item list (e.g. col 3 ln 1-3, col 6 ln 38-45);

selecting neighboring users from the first set of users based on similarities between the advisee and each member of the first set of users ("similar consumers buy similar products" (e.g. col 12 ln 25-27, col 20 ln 1-22)); and

generating a recommendation of at least one item from the selected item list based on ratings provided by each neighboring user. (e.g. col 70 ln 1-7). (e.g. col 12 ln 25-27, col 20 ln 1-22).

Note that ""Relevant definitions of terms for the purpose of this description include: (a.) an object available for access by the user, which may be either physical or electronic in nature, is termed a "target object", (b.) a digitally represented profile indicating that target object's attributes is termed a "target profile", (c.) the user looking for the target object is termed a "user", (d.) a profile holding that user's attributes, including age/zip code/etc. is termed a "user profile", (e.) a summary of digital profiles of target objects that a user likes and/or dislikes, is termed the "target profile interest summary" of that user, (f.) a profile consisting of a collection of attributes, such that a user likes target objects whose profiles are similar to this collection of attributes, is termed a "search profile" or in some contexts a "query" or "query profile," (g.) a specific embodiment of the target profile interest summary which comprises a set of search

profiles is termed the "search profile set" of a user, (h.) a collection of target objects with similar profiles, is termed a "cluster," (i.) an aggregate profile formed by averaging the attributes of all tar get objects in a cluster, termed a "cluster profile," (j.) a real number determined by calculating the statistical variance of the profiles of all target objects in a cluster, is termed a "cluster variance," (k.) a real number determined by calculating the maximum distance between the profiles of any two target objects in a cluster, is termed a "cluster diameter."" (col 4 ln 48-col 5 ln 5).

As above, Herz, wherein "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Also, "The information maps so produced and the application of users' target profile interest summaries to predict the information consumption patterns of a user allows for pre-caching of data at locations on the data communication network and at times that minimize the traffic flow in the communication network to thereby efficiently provide the desired information to the user and/or conserve valuable storage space by only storing those target objects (or segments thereof) which are relevant to the user's interests. (col 8 ln 38-48). Thus, it would be

obvious to one of ordinary skill in the art that similarity factors are determined between the advisee and neighboring users only for the items on the selected item list.

Regarding claim 9 –

Herz discloses the computerized method of claim 8, wherein the similarities are determined from an advisee profile and user profiles, and the advisee and user profiles are based on advisee and user behavior including at least one of buying pattern, item ratings, bookmarked websites, website usage pattern, and user action relative to a particular item. ("similar consumers buy similar products" (e.g. col 12 ln 25-27, col 20 ln 1-22));

Regarding claim 10 –

Herz discloses the computerized method of claim 9, wherein an advisee profile or a user profile is updated when a new piece of information is added thereto. (e.g. col 6 ln 15-25).

Regarding claim 11 –

Herz discloses the computerized method of claim 8, further comprising assigning a confidence factor to each advisee profile and each user profile, wherein the confidence factor is based on the combined effect of selected pieces of information recorded in a user or advisee profile. (e.g. col 30 ln 20-35).

Regarding claim 12 –

Herz discloses the computerized method of claim 8, further including determining similarities between the advisee and each member of the first set of users after receiving a selected item list from the advisee. (e.g. col 6 ln 38-45).

Regarding claim 13, 22, 23 –

Herz discloses the computerized method of claim 8, wherein a member of the first set of users is selected as a neighboring user if the similarity between the advisee and the member of the first set of users is better than a predetermined threshold. (e.g. col 6 ln 38-45, col 18 ln 1-10).

Regarding claim 14 –

Herz discloses the computerized method of claim 8, further comprising assigning a weight to each neighboring user where the weight is greater for a neighboring user have greater similarity to the advisee and the weight is lower for a neighboring user having a lower similarity to the advisee. (e.g. col 22 ln 15-30).

Regarding claim 15 –

Herz discloses the method of claim 1, further comprising updating the selected neighboring users each time a new rating is entered or inferred during the recommendation request. (col 66 ln 1-25).

Regarding claim 16 –

Herz discloses the system of claim 7, wherein the system updates selected neighboring users each time a new rating is entered or inferred during a recommendation request. (col 66 ln 1-25).

Regarding claim 17 –

Herz discloses the method of claim 8, further comprising updating the selected neighboring users each time a new rating is entered or inferred during the recommendation request. (col 66 ln 1-25).

Regarding claim 18 –

Herz discloses the method of claim 1, wherein the selected neighboring users are users who have a similarity factor which is better than a predetermined threshold value. (e.g., col 6 ln 38-45, col 18 ln 1-10).

Regarding claim 19 –

Herz discloses the method of claim 8, wherein the selected neighboring users are users who have a similarity factor which is better than a predetermined threshold value. (e.g. col 6 ln 38-45, col 18 ln 1-10).

(10) Response to Argument

First Issue

Appellant argues, regarding claim 1, that nothing in the cited prior art discloses, teaches or suggests "receiving a recommendation request comprising a selected item list from an advisee".

Examiner respectfully disagrees and directs attention to Herz, wherein ""Write a short description of the desired information." (e.g. col 25 ln 46-62, col 3 ln 1-10); (note that if a user is requesting a recommendation, the recommendation must somehow be received, and that no one asks for a recommendation in a vacuum, but rather asks for a recommendation on a type or list of items, such as apples, history books, or romantic movies);

Also:

"For example, a user searching for information on a subject can write a short description of the desired information. The information retrieval computer generates an

article profile for the request and then retrieves articles with profiles similar to the profile generated for the request. These requests can then be refined using "relevance feedback", where the user actively or passively rates the articles retrieved as to how close the information contained therein is to what is desired. The information retrieval computer then uses this relevance feedback information to refine the request profile and the process is repeated until the user either finds enough articles or tires of the search." (col 2 ln 66- col 3 ln 10). Obviously the user is making a request that is received by the information retrieval computer.

Second Issue

Appellant arguers, regarding claim 1, that nothing in the cited prior art discloses, teaches or suggests, "at least one newly rated item and determining which at least one user has already rated the item,"

Examiner respectfully disagrees and directs attention to Herz, wherein generates an article profile for the request (e.g. col 3 ln 7-10), and where "similar consumers buy similar products" (e.g. col 12 ln 25-27, col 20 ln 1-22).

Third Issue

Appellant argues, regarding claim 1, that nothing in the cited reference teaches, discloses or suggests, "similarity between the advisee and a plurality of users of the recommendation system."

Examiner respectfully disagrees and directs attention to Herz, wherein "similar consumers buy similar products" (e.g. col 12 ln 25-27, col 20 ln 1-22). Further, "Accordingly, like other target objects, users (or user pseudonyms) in accordance with

their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Here, Herz discloses calculating similarity factors only with respect to certain users, when generating a recommendation for a movie or other item.

Fourth Issue

Appellant argues, regarding claim 7, that nothing in the cited reference teaches, discloses or suggests, "a user profile for a recommendation system, comprising a plurality of records, each record including a user identifier, an item identifier, and a rating value, wherein each record is linked in a first and a second dimension, the first dimension linking records with a same user identifier in a sequence according to the item identifier, and the second dimension linking records with a same item identifier in a sequence according to the user identifier".

Examiner respectfully disagrees and directs attention to Herz, wherein, "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment

is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Here, Herz discloses calculating similarity factors only with respect to certain users, when generating a recommendation for a movie or other item, thus it is obvious to one of ordinary skill in the art that users as target objects which are separately browsed, would be separately updated and that such users may be grouped or chosen in different ways including geographic proximity to the advisee.

Fifth Issue

Appellants argue, regarding claim 7, that nothing in the cited prior art teaches, discloses or suggests, "a user profile for a recommendation system, comprising a plurality of records, each record including a user identifier, an item identifier, and a rating value, wherein each record is linked in a first and a second dimension, the first dimension linking records with a same user identifier in a sequence according to the item identifier, and the second dimension linking records with a same item identifier in a sequence according to the user identifier".

Examiner respectfully disagrees and directs attention to Herz where Relevant definitions of terms for the purpose of this description include: (a.) an object available for access by the user, which may be either physical or electronic in nature, is termed a "target object", (b.) a digitally represented profile indicating that target object's attributes is termed a "target profile", (c.) the user looking for the target object is termed a "user",

(d.) a profile holding that user's attributes, including age/zip code/etc. is termed a "user profile", (e.) a summary of digital profiles of target objects that a user likes and/or dislikes, is termed the "target profile interest summary" of that user, (f.) a profile consisting of a collection of attributes, such that a user likes target objects whose profiles are similar to this collection of attributes, is termed a "search profile" or in some contexts a "query" or "query profile," (g.) a specific embodiment of the target profile interest summary which comprises a set of search profiles is termed the "search profile set" of a user, (h.) a collection of target objects with similar profiles, is termed a "cluster," (i.) an aggregate profile formed by averaging the attributes of all tar get objects in a cluster, termed a "cluster profile," (j.) a real number determined by calculating the statistical variance of the profiles of all target objects in a cluster, is termed a "cluster variance," (k.) a real number determined by calculating the maximum distance between the profiles of any two target objects in a cluster, is termed a "cluster diameter."" (col 4 ln 48-col 5 ln 5).

As above, Herz, wherein "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the

target object." (col 6 ln 34-39). Also, "The information maps so produced and the application of users' target profile interest summaries to predict the information consumption patterns of a user allows for pre-caching of data at locations on the data communication network and at times that minimize the traffic flow in the communication network to thereby efficiently provide the desired information to the user and/or conserve valuable storage space by only storing those target objects (or segments thereof) which are relevant to the user's interests. (col 8 ln 38-48). Thus, it would be obvious to one of ordinary skill in the art that similarity factors are determined between the advisee and neighboring users only for the items on the selected item list.

Sixth Issue

Appellants argue regarding claim 8, that nothing in the cited prior art teaches, discloses or suggests, "receiving a recommendation request comprising a selected item list from an advisee for a recommendation by a recommendation system".

Examiner respectfully disagrees and directs attention to Herz, at col 25 ln 46-62, col 3 ln 1-10); Note that if a user is requesting a recommendation, the recommendation must somehow be received, and that no one asks for a recommendation in a vacuum, but rather asks for a recommendation on a type or list of items, such as apples, history books, or romantic movies.

Seventh Issue

Appellants argue, regarding claim 8, that nothing in the cited reference teaches, discloses or suggests in response to the recommendation request, computing a plurality

of similarity factors based on at least one advisee profile from at least one newly rated item and determining which at least one user has already rated the item"

Examiner respectfully disagrees and directs attention to Herz, where "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Also, "The information maps so produced and the application of users' target profile interest summaries to predict the information consumption patterns of a user allows for pre-caching of data at locations on the data communication network and at times that minimize the traffic flow in the communication network to thereby efficiently provide the desired information to the user and/or conserve valuable storage space by only storing those target objects (or segments thereof) which are relevant to the user's interests. (col 8 ln 38-48). Thus, it would be obvious to one of ordinary skill in the art that similarity factors are determined between the advisee and neighboring users only for the items on the selected item list.

Eighth Issue

Appellants argue, regarding claim 8, that nothing in the cited reference teaches, discloses or suggests, "generating a recommendation of at least one item from the selected item list based on ratings provided by each neighboring user".

Examiner respectfully disagrees and directs attention to Herz, wherein "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Also, "The information maps so produced and the application of users' target profile interest summaries to predict the information consumption patterns of a user allows for pre-caching of data at locations on the data communication network and at times that minimize the traffic flow in the communication network to thereby efficiently provide the desired information to the user and/or conserve valuable storage space by only storing those target objects (or segments thereof) which are relevant to the user's interests. (col 8 ln 38-48). Thus, it would be obvious to one of ordinary skill in the art that similarity factors are determined between the advisee and neighboring users only for the items on the selected item list.

Ninth Issue

Applicants argue, regarding claim 32, that nothing in the cited reference teaches, discloses or suggests "temporarily calculating a multitude of similarity factors, for use within a recommendation request only".

Examiner respectfully disagrees and directs attention to Herz wherein "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Note that it is obvious that if a pseudonym is being used, it is at least part being done to make sure that similarity factors are being calculated for use in the recommendation and not in order to have all the information regarding the user (similarity factors, address, names, etc) be somehow disseminated to the world.

Tenth Issue

Appellants argue, regarding claim 2, that nothing in the cited prior art teaches, suggests or discloses "wherein all items upon which the step of computing depends are included in the selected item list."

Examiner respectfully disagrees and directs attention to Herz wherein A related technique is to replace each word by its morphological stem, so that "staple", "stapler",

and "staples" and "staple." Common function words ("a", "and", "the"...) can influence the calculated similarity of texts without regard to their topics, and so are typically removed from the text before the scores of terms in the text are computed. A more general approach to recognizing synonyms is to use a revised measure of the distance between textual attribute vectors V and U, namely arccos(AV(AU)t/sqrt (AV(AV)t AU(AU)t), where the matrix A is the dimensionality-reducing linear transformation (or an approximation thereto) determined by collecting the vector values of the textual attribute, for all target objects known to the system, and applying singular value decomposition to the resulting collection." (col 16 ln 34-48).

Eleventh Issue

Appellants argue, regarding claim 3, that nothing in the cited reference teaches, discloses, or suggests "wherein the recommendation of at least one item includes only items that are included in the selected item list."

Examiner respectfully disagrees and directs attention to Herz, wherein, at col 23 ln 60- col 24 ln 10, where only clusters containing the target objects are being compared.

Twelfth Issue

Appellants argue, regarding claim 4, that nothing in the cited reference teaches, discloses or suggests "wherein the step of selecting neighboring users excludes, any user whose similarity with the advisee is below a predetermined threshold."

Examiner respectfully disagrees and directs attention to Herz, wherein, at col 24 ln 1-10, it is only necessary to compare buyers and sellers who are similar enough to be in the same cluster.

Thirteenth Issue

Appellants argue, regarding claim 5, that nothing in the cited reference teaches, discloses or suggests "wherein the step of computing and the step of selecting are executed substantially in parallel by inserting each newly computed similarity factor into a neighbor list in decreasing order of similarity and by limiting length of the neighbor list by excluding a user with lowest similarity if otherwise the neighbor list would exceed a predetermined length. '

Examiner respectfully disagrees and directs attention to Herz, wherein, at col 24 ln 1-10, it is only necessary to compare buyers and sellers who are similar enough to be in the same cluster.

Fourteenth Issue

Appellants argue, regarding claim 4, that nothing in the cited reference teaches, discloses or suggests "the step of caching identifiers of the neighboring users, associated similarity factors, and time stamps."

Examiner respectfully disagrees and directs attention to Herz, wherein, at col 5 ln 55-57, Herz recites "proxy server dissociates the user's true identity from the pseudonym by the use of cryptographic techniques."

Fifteenth Issue

Appellants argue, regarding claim 11, that nothing in the cited prior art teaches, discloses or suggests, "further comprising assigning a confidence factor to each advisee profile and each user profile, wherein the confidence factor is based on the combined effect of selected pieces of information recorded in a user or advisee profile."

Examiner respectfully disagrees and directs attention to Herz, wherein, at col 24 ln 1-10, it is only necessary to compare buyers and sellers who are similar enough to be in the same cluster.

Sixteenth Issue

Appellants argue, regarding claim 12 that nothing in the cited reference teaches, discloses or suggests, "further including determining similarities between the advisee and each member of the first set of users after receiving a selected item list from the advisee.".

Examiner respectfully disagrees and directs attention to Herz at col 6 ln 15-59, where users communicate an interest and are then compared with other users.

Seventeenth Issue

Appellants argue, regarding claims 20 and 21, that nothing in the cited reference teaches, discloses or suggests "creating a user profile for each of the plurality of users, wherein the user profiles do not include any pre-computed similarity factors.

Examiner respectfully disagrees and directs attention to Herz, col 4 ln 48- col 5 ln 20, where a user profile is being generated. Initially all user profiles start of not being precomputed since here they are being computed.

Eighteenth Issue

Appellants argue, regarding claims 24 and 25, that nothing in the cited reference teaches, discloses or suggests "updating only the similarity factors between the neighboring users and the advisee when a new rating is entered for the at least one advisee profile; and using an algorithm to determine a ranked matching list of the neighboring users."

Examiner respectfully disagrees and directs attention to Herz col 91 ln 40-45 where only certain attributes or rating get modified, as opposed to a full profile.

Nineteenth Issue

Appellants argue, regarding claims 26 and 27, that nothing in the cited reference teaches, discloses or suggests "for each recommendation request by the advisee, computing for temporary use the similarity factors measuring the similarity between the advisee and the plurality of users; and associating the similarity factors with corresponding users to determine, per recommendation request, the neighboring users; and using the neighboring users determined per recommendation request to provide a basis for calculating the recommendation."

Examiner respectfully disagrees and directs attention to Herz, "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an

automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Note that it is obvious that if a pseudonym is being used, it is at least part being done to make sure that similarity factors are being calculated for use in the recommendation and not in order to have all the information regarding the user (similarity factors, address, names, etc) be somehow disseminated to the world.

Twentieth Issue

Appellants argue, regarding claim 28, that nothing in the cited prior art teaches discloses or suggests, "the method determines the similarity factors between the advisee and the neighboring users only for the items of the selected item list."

Examiner respectfully disagrees and directs attention to Herz, wherein "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the

target object's profile are herein termed "attributes" of the target object." (col 6 ln 34-39). Also, "The information maps so produced and the application of users' target profile interest summaries to predict the information consumption patterns of a user allows for pre-caching of data at locations on the data communication network and at times that minimize the traffic flow in the communication network to thereby efficiently provide the desired information to the user and/or conserve valuable storage space by only storing those target objects (or segments thereof) which are relevant to the user's interests. (col 8 ln 38-48). Thus, it would be obvious to one of ordinary skill in the art that similarity factors are determined between the advisee and neighboring users only for the items on the selected item list.

Twenty-first Issue

Appellants argue, regarding claim 29, that nothing in the cited prior art teaches discloses or suggests "the similarity factors of the advisee are not calculated with respect to all users for every individual recommendation request."

Examiner respectfully disagrees. Herz discloses wherein "Accordingly, like other target objects, users (or user pseudonyms) in accordance with their user profiles (or portions of which they have disclosed) may be organized and browsed within an automatically generated menu tree, which is below described in detail. In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object's profile

are herein termed "attributes" of the target object." (col 6 ln 34-39). Here, it would be obvious to one of ordinary skill in the art that Herz discloses calculating similarity factors only with respect to certain users, when generating a recommendation for a movie or other item.

Twenty-Second Issue

Appellants argue, regarding claims 30 and 31, that nothing in the cited prior art teaches discloses or suggests "storing or updating all ratings in a single large sparse matrix in a computer's main memory; and postponing any calculations of the similarity factors and the neighboring users until a concrete request for recommendation for the advisee is to be processed."

Examiner respectfully disagrees. Just as making separate or duplicating parts does not confer patentability, neither does having only one of a server or memory. Further, performing calculation either before or after a request is mere re-ordering and thus an obvious variation.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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10/007,583 APPEAL TABLE – Claim 1 and Herz (US 6,029,195)

Clause No.	**Claim 1**	Herz (US 6,029,195)
1	"recommendation request"	"Write a short description of the desired information." (e.g. col 25 ln 46-62, col 3 ln 1-10); (note that if a user is requesting a recommendation, the recommendation must somehow be received, and that no one asks for a recommendation in a vacuum, but rather asks for a

Clause No.	Claim 1	Herz (US 6,029,195)
	A computerized method for generating a recommendation of an item to an advisee, comprising the steps of: receiving a recommendation request comprising a selected item list from an advisee for a recommendation by a recommendation system;	recommendation on a type or list of items, such as apples, history books, or romantic movies); Also: "For example, a user searching for information on a subject can write a short description of the desired information. The information retrieval computer generates an article profile for the request and then retrieves articles with profiles similar to the profile generated for the request. These requests can then be refined using "relevance feedback", where the user actively or passively rates the articles retrieved as to how close the information contained therein is to what is desired. The information retrieval computer then uses this relevance feedback information to refine the request profile and the process is repeated until the user either

Clause No.	Claim 1	Herz (US 6,029,195)
		finds enough articles or tires of the search." (col 2 ln 66- col 3 ln 10). Obviously the user is making a request that is received by the information retrieval computer.
2	computing a plurality of similarity factors in response to the recommendation request, computing a plurality of similarity factors based on: at least one advisee profile from at least one newly rated item and determining which at least one user has already rated the item, wherein the advisee profile comprises a plurality of records, each record including a user identifier, an item identifier, and a rating value, such that	generates an article profile for the request (e.g. col 3 ln 7-10);

Clause No.	Claim 1	Herz (US 6,029,195)
	each record is linked in a first and a second dimension; and	
3	items from the selected item list that indicate similarity between the advisee and a plurality of users of the recommendation system who have previously provided ratings of items from the selected item list;	"relevance feedback", where the user actively or passively rates the articles retrieved as to how close the information contained therein is to what is desired. (e.g. col 3 ln 1-3, col 6 ln 38-45)
4	selecting, from the plurality of users of the recommendation system, neighboring users to the advisee, according to the similarity factors;	"similar consumers buy similar products" (e.g. col 12 ln 25-27, col 20 ln 1-22);
5	generating a recommendation of at least one item of the selected item list, according to the previously provided ratings of the at least one item by the neighboring users.	(e.g. col 70 ln 1-7). (e.g. col 12 ln 25-27, col 20 ln 1-22);